

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims:

1. (currently amended) An *in vitro* method of preventing and/or reducing the risk of development of treating diabetes type 2 diabetes in a subject in need thereof, said method comprising a step of administering a pharmaceutically effective amount of a an root extract of plant Pueraria Pueraria tuberosa or butanol fraction of the extract or Lupinoside A<sub>4</sub> (LPA<sub>4</sub>), optionally along with additive(s) to cells the subject.
2. (currently amended) A method as claimed in claim 1, wherein the subject is an animal said method of preventing and/or reducing the risk of development of type 2 diabetes is by means of augmenting Glut4 phosphorylation and Glut4 translocation to enhance insulin signal in a signal transduction pathway.
3. (currently amended) A method as claimed in claim 1, wherein the subject is a human extract is an aqueous extract.
4. Cancelled.
5. (currently amended) A method as claimed in claim 1, wherein the additive is selected from a group comprising nutrients such as proteins, carbohydrates, sugars, talc, magnesium, stearate, cellulose, calcium carbonate, starch, gelatin paste, pharmaceutically acceptable carriers, excipients, diluents, and/or, solvent.
6. (currently amended) A method as claimed in claim 1, wherein the fraction is administered at the concentration ranging between 1 to 40 mg/kg body weight said method shows an increase in glucose uptake by the cells.

7. (currently amended) A method as claimed in claim 1, wherein ~~the Lupinoside is administered at the concentration ranging between 1 to 40 mg/kg body weight~~ said method is nontoxic to said cells.
8. (currently amended) A method as claimed in claim 1, wherein ~~the administration route is selected from a group comprising orally, intravenously, intramuscularly, and subcutaneously~~ said extract prevents palmitate induced defects on insulin signaling.
9. (withdrawn) A pharmaceutical composition useful in preventing and/or treating diabetes type 2, said composition comprising an extract of plant *Pureria tuberosa* or butanol fraction of the extract or Lupinoside A4 (LPA4), and additive(s).
10. (withdrawn) A pharmaceutical composition as claimed in claim 9, wherein the additive is selected from a group comprising nutrients such as proteins, carbohydrates, sugars, talc, magnesium stearate, cellulose, calcium carbonate, starch, gelatin paste, pharmaceutically acceptable carrier, excipients, diluent and, solvent.
11. (withdrawn) A pharmaceutical composition as claimed in claim 9, the extract is obtained from root of the plant.
12. (withdrawn) A pharmaceutical composition as claimed in claim 9, the fraction is of concentration ranging between 1 to 40 mg /kg body weight.
13. (withdrawn) A pharmaceutical composition as claimed in claim 9, the Lupinoside is of concentration ranging between 1 to 40 mg /kg body weight.
14. (withdrawn) A pharmaceutical composition as claimed in claim 9, wherein the composition is in a form selected from a group comprising capsule, syrup, concentrate, powder, and granules.

15. (withdrawn) A pharmaceutical composition as claimed in claim 9, wherein the extract is an aqueous extract.
16. (withdrawn) A method of augmenting Glut4 phosphorylation and Glut4 translocation to a target cell membrane to enhance insulin signal in a signal transduction pathway in a subject in need thereof, said method comprising administering pharmaceutically effective amount of an extract of plant *Pureria tuberosa* or butanol fraction of the extract or Lupinoside A4 (LPA4), optionally along with additive(s) to the subject.
17. (withdrawn) A method as claimed in claim 16, wherein the subject is an animal.
18. (withdrawn) A method as claimed in claim 16, wherein the subject is a human being.
19. (withdrawn) A method as claimed in claim 16, wherein the extract is obtained from root of the plant.
20. (withdrawn) A method as claimed in claim 16, wherein the additive is selected from a group comprising nutrients such as proteins, carbohydrates, sugars, talc, magnesium stearate, cellulose, calcium carbonate, starch, gelatin paste, pharmaceutically acceptable carrier, excipients, diluent and, solvent.
21. (withdrawn) A method as claimed in claim 16, wherein the fraction is administered at the concentration ranging between 1 to 40 mg /kg body weight.
22. (withdrawn) A method as claimed in claim 16, wherein the Lupinoside is administered at the concentration ranging between 1 to 40 mg /kg body weight.
23. (withdrawn) A method as claimed in claim 16, wherein the method helps prevent/treat type 2 diabetes.

24. (withdrawn) A method as claimed in claim 16, wherein the method shows increase in glucose uptake by the cells.
25. (withdrawn) A method as claimed in claim 16, wherein the method is non-toxic to the cells.
26. (withdrawn) A method as claimed in claim 16, wherein the translocation is from cytosol to membrane of the insulin response cells.
27. (withdrawn) A method as claimed in claim 16, wherein the Lupinoside A4 (LP4) prevents palmitate induced defects on insulin signaling.
28. (withdrawn) A method as claimed in claim 16, wherein the Lupinoside A4 (LP4) allows insulin to stimulate IR-beta and Akt phosphorylation.
29. (withdrawn) A simplified and inexpensive process of obtaining extract and thereafter selectively, its active n-butanol fraction and active molecule Lupinoside PA (LPA4), useful in preventing and/or treating diabetes type 2, said process comprising steps of:
- a. cutting the plant parts into small parts,
  - b. extracting the cut parts with methanol and water,
  - c. partitioning the methanol and water extract between ethyl acetate and water,
  - d. extracting the aqueous layer further with n-butanol to obtain butanol fraction, and
  - e. subjecting the n-butanol fraction to chromatography with water and methanol as eluent to obtain Lupinoside PA4 (LPA4).

30. (withdrawn) A method as claimed in claim 29, wherein the plant part is root.
31. (withdrawn) A method as claimed in claim 29, wherein the solvent is selected from a group comprising methanol, and water.
32. (withdrawn) A method as claimed in claim 29, wherein the water and methanol are in the ratio of about 1:1.
33. (withdrawn) A method as claimed in claim 29, wherein the chromatography is column chromatography.